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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,097	03/11/2004	Kenji Kato	01-569	4593

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POSZ & BETHARDS, PLC  
11250 ROGER BACON DRIVE  
SUITE 10  
RESTON, VA 20190

EXAMINER

BELLAMY, TAMIKO D

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/797,097

Applicant(s)

KATO, KENJI

Examiner

Tamiko D. Bellamy

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date: _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/11/04</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akimoto et al. (6,282,957).

Re to claim 1, Akimoto et al. discloses a vibrator (1), a driving circuit (A1) for applying AC voltage (col. 8, lines 8-18). As depicted in fig. 9, Akimoto et al. discloses a first and second detection circuits (210 & 212). Akimoto et al. discloses an adjusting circuit (e.g. amplitude adjuster (206)) for adjusting the amplitude of the modified feedback (FB) signal and produces a diagnostic signal (VB), which is sent to diagnosing electrodes (17 & 18) (col. 9, lines 49-53). Akimoto et al. also discloses that the second detector (212) performs detection based on a reference signal produced from the band pass filter (BPF 205) (col. 10, lines 11-14). While, Akimoto et al. does not specifically disclose that the adjusting circuit (206) is for adjusting the first signal of the first detection circuit, Akimoto et al. specifically states that diagnostic circuit (A3) generates a signal based on a signal responsive to the diagnostic signal (VB) obtained from at least one of the drive electrodes and the angular velocity sensing electrodes. As depicted in fig. 3, the output signals from the monitoring electrodes (13 & 14), which monitor the driving conditions, are processed by the first detection circuit (e.g. first detector 210).

Therefore the teachings of Akimoto et al. clearly infers and/or suggest the adjusting circuit for adjusting the first signal of the first detection circuit. As depicted in fig. 3, the adjusted circuit (206) applies the first signal to the second detection circuit (e.g., second detector 212). Therefore, to employ Akimoto et al. on an adjusting circuit for adjusting the first signal of the first detection circuit on would have been obvious to one of ordinary skill in the art at the time of the invention since this reference explicitly teaches its use on an angular velocity sensor

Re to claim 2, as depicted in figs. 1 and 3, Akimoto et al. discloses a pair of arm portions (1,4). Akimoto et al. discloses the use of two adjusting circuits (e.g., amplitude adjusters (206)) (col. 11, lines 8-10). Finally Akimoto et al. discloses a second detection circuit (212). As depicted in fig. 3, Akimoto et al. discloses that the second circuit (e.g., second detector 212) includes a plurality of amplifying circuits (207, 208).

Re to claim 5, Akimoto et al. discloses an adjusting circuit (e.g., amplitude adjusting circuit 206). While, Akimoto et al. does not specifically disclose that the adjusting circuit includes a variable resistor. The use of a variable resistor is a design consideration clearly with in the preview of one having ordinary skill in the art.

Therefore, to employ Akimoto et al. on an adjusting circuit including a variable resistor would have been obvious to one of ordinary skill in the art at the time of the invention since this reference explicitly teaches its use on an angular velocity sensor, which includes an adjusting circuit.

3. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akimoto et al. (6,282,957) in view of Kosuge et al (JP60188809).

Re to claims 3 and 4, Akimoto et al. discloses that the amplitude is 180 degrees phase-shifted. As depicted in figs. 3, Akimoto et al. discloses a multiplier (204) for modifying the feedback (FB) signal and producing a signal with a frequency of  $2f_d$  (see col. 9, lines 45-48) and supplying the signal to the second detection circuit (212). As depicted in fig. 10, Akimoto et al. discloses two amplitude adjusting circuits (307, 308) and a phase adjuster (314). Akimoto et al. lacks the detail of an adding circuit and adjusting the amplitude of a 90-degree phase-shifted first signal. However, Akimoto et al. discloses adjusting the amplitude that is 180 degrees phase-shifted. The circuit design disclosed by Akimoto et al. can easily be manipulated to adjust the amplitude of 90-degree phase-shifted signal, and replacing the multiplier with an adder circuit. Kosuge et al. discloses an oscillating signal (A) and applied to a detector (28) and an adding circuit (e.g., adder 27) through a phase regulator (25) and an amplitude regulator (26). Therefore, to modify Akimoto et al. by employing adding circuit and adjusting the amplitude of a 90-degree phase-shifted first detection signal would have been obvious to one of ordinary skill in the art at the time of the invention since Kosuge et al. teaches a vibratory angular velocity detector having these design characteristics. The skilled artisan would be motivated to combine the teachings of Akimoto et al. and Kosuge et al. since Akimoto et al. states that his invention is applicable to angular velocity sensor which includes a vibrator and Kosuge et al. is directed to an angular velocity sensor including a vibrator.

### ***Conclusion***

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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamiko D. Bellamy whose telephone number is (571) 272-2190.


The examiner can normally be reached on Monday - Friday 6:30 AM to 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tamiko Bellamy

T.B.  
September 1, 2004

  
HEZRON WILLIAMS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800